TLC200 Pro

User Manual

Never miss a shot

SEE the **UNSEEN**

HDR Time Lapse Video camera

***TLC**200 Pro*

User Manual

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To Be A Part Of

Brinno

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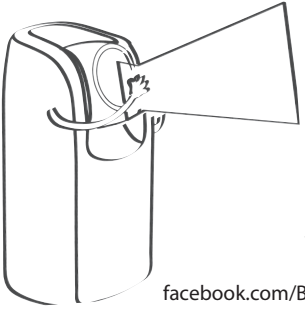

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Optional Accessories

Weather Resistant Housing
(ATH120)

Brinno Reader
(ABR100)

Bike Cam Holder
(ABH100)

Shutter Line
(ATS110)

Camera Wall mount
(AWM100)

Motion Sensor
(ATM110)

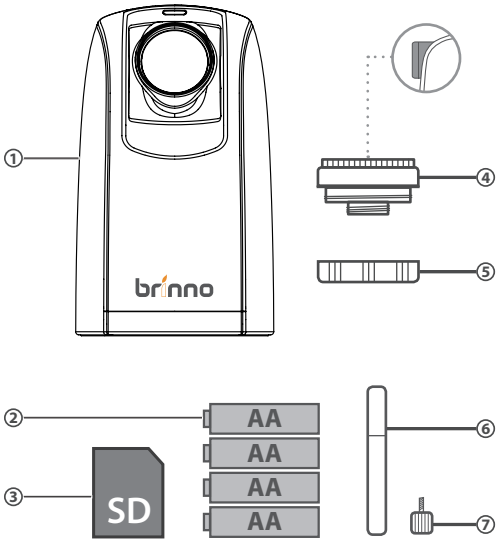
Hyper Lapse
(ART100)

Pouch
(ATP100)

Microscope Holder
(AMH100)

Other CS Mounts

Package Contents



1. HDR Time Lapse Camera (TLC200 Pro)
2. 4 AA Batteries
3. SD Card
4. Kit Lens (BCS 295)
5. Lens cover
6. Screwdriver
7. Screw

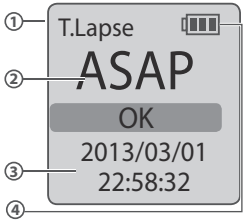
Before You Begin Taking Photos

Parts of the Camera

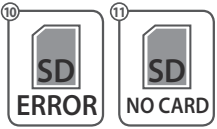
❶ Kit Lens (Page 26)
❷ SD Card Slot
❸ Connector for Accessories (Page. 27)
❹ Connector for Micro USB cable (Page. 28~29)
❺ Battery Door
❻ Strap Eyelet
❼ LED indicator
❽ LCD Screen
❾ MENU (←) Button
❿ TIME (→) Button
⓫ OK/ START Button
⓬ Power Switch
⓭ Tripod Screw Hole

Display Icons

Set Up screen



Preview screen



At Set Up screen

1 Capture mode
T.Lapse: Time Lapse mode
Shutter: Stop Motion mode
Motion: Motion Activated mode

2 Time interval
Select a pre-set time interval or customize yourself.

3 System date and time

4 Battery level

Icon	Description
(green)	Battery fully charged.
(green)	Battery partially charged.
(yellow)	Low battery. Replace as soon as possible.
(red)	Out of battery. Replace battery immediately.

At Preview screen

5 Scene mode

6 White Balance mode

7 Preview image capture window

Status icon

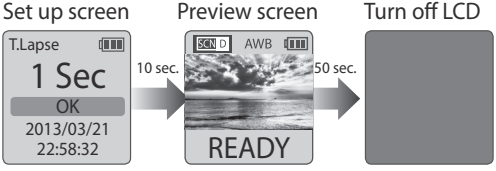
8 Battery Empty
Please replace battery immediately.

9 SD Card Full
Please download files to clear SD card space.

10 SD Card Error
Please replace SD card.

11 No Card
Please Insert SD card.

How Our Power Saving Technology Works



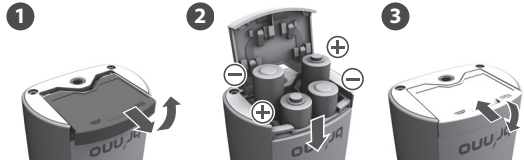
At The Set Up Screen

After ***10*** seconds without activity on the set up screen, the camera will go to Preview screen automatically. You can press the ***MENU*** or ***TIME*** button to go back to the set up screen.

At Preview Screen

After ***50*** seconds without activity on the set up or preview screen, the LCD screen will turn off automatically to save power. You can press the ***OK*** button to wake up camera.

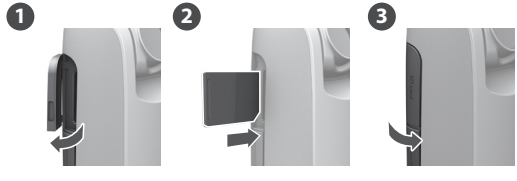
Initial Step-1 Installing the Batteries



1. Open battery door.
2. Insert 4 AA batteries.
3. Close battery door.

⚠ Be sure the battery cover is locked into place.

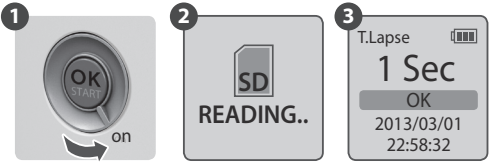
Initial Step-2 Installing SD Card



1. Open SD card cover.
2. Insert SD card until it clicks into place.
3. Close SD card cover.

First Steps

Initial Step-3 Turning on the Camera



1. Rotate the ***Power*** switch to the ***ON*** position.
2. Process screen
   ⚠ It may display other information on screen, please refer to page 7.
3. Set Up screen

Initial Step-4 Setting the Time and Date

1. Press the MENU button to go to Setting -> MORE
2. At MORE Setting, select Set Date & Time, and press OK.
3. At the highlight field, press MENU (←) to decrease value, press TIME (→) to increase value, press OK to confirm and go to the next field. When finished press OK to exit set up.

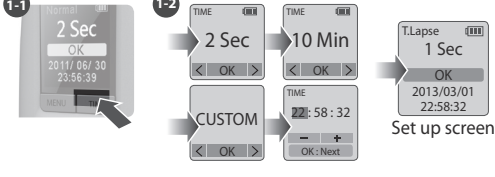
Time Lapse Mode

In Time Lapse Mode, the camera will take one photo at the time interval you selected. When you are finished recording, the camera will convert those photos into a time lapse video!
Before you begin recording, you can change the "Time Lapse Frame Rate". For more information please refer to page 16.

Output file format: AVI. (Without audio)
Resolution: 720P

Time Lapse video length: The maximum size of each single AVI file ranges between 8,192 to 20,480 frames, depending on the time interval setting.

1. Setting the Time Interval:

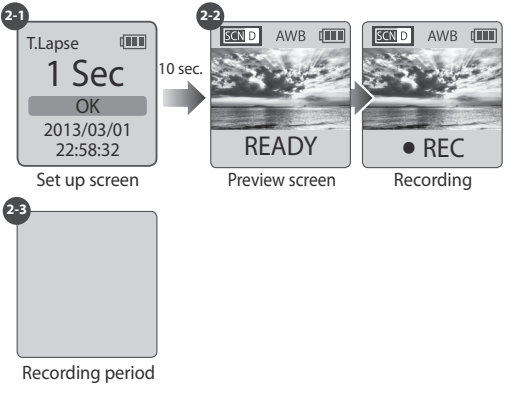


1-1 Press TIME button to enter time interval set up.
1-2 Press MENU (←) and TIME (→) to select a pre-set time interval or customize it by yourself. When complete, press the OK Button to confirm and return to the Set up screen.

⚠ Time Interval range: from below 1 second to 24 hours.

Mode

2. To Begin Recording

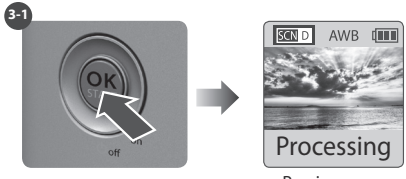


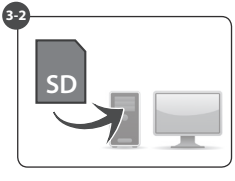
2-1 After selecting the time interval, press OK to proceed to the **Preview Screen.**

2-2 On the Preview screen, hold the OK button for 2 seconds to start recording. Preview Screen will show REC at the bottom bar.

2-3 During the recording period, the LCD panel will turn off to save power.

3. To Stop Recording



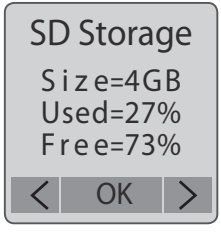


3-1 While recording, hold the **OK** button until the LCD light turns on and shows the text "**Processing**", it means the camera is processing file closing. When completed the processing it will display the text "Ready" This indicates the recording session is complete.

3-2 Remove the SD card from the camera, and insert it into your computer or laptop to enjoy your amazing Time Lapse Videos!

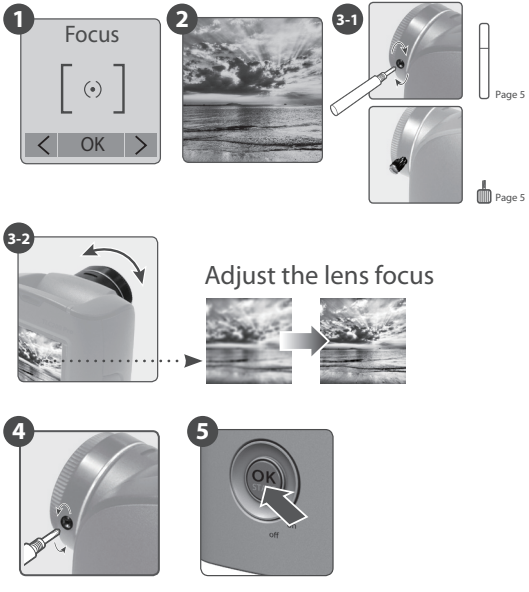
Storage status

In this mode, the LCD will display the SD card capacity, so you will know how much free space remains on the SD card.



Focus Mode

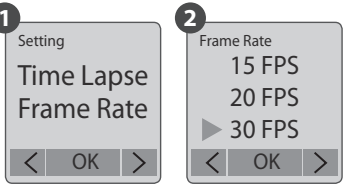
In this mode, the camera will enlarge the preview image, so you can adjust the lens focus easily.



1. Select and enter "Focus" mode.
2. See the enlarge preview image.
3. Use the screwdriver to loosen the screw and adjust the lens focus.
4. Finished adjustment, using screw driver to tighten the screw.
5. Press "OK" to exit focus mode.

Basic Setting

Setting the Time Lapse Frame Rate:



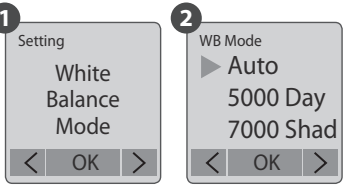
10FPS (Frames Per Second) means: 10 frames are played in 1 second.

1. Press MENU button to enter "Setting" mode.
2. Select and enter "Time Lapse Frame Rate".
3. What frame rate should I use?

Generally, 10 FPS is suitable for Time Lapse video, but we suggested 30 FPS.
1 FPS: The video plays 1 frame per second, so the video will not look smooth, and the video length will be longer.
30 FPS: The video plays 30 frames per second, so the video will look smooth, and the video length will be shorter.

Option	Video playback speed	Shooting subject
1 FPS	Very slow	Slide show
5 FPS	Slow	Stop motion, Face time lapse
10 FPS	Medium	Biking
15 FPS	Medium	Flowers growing, Educational endeavors
20 FPS		
30 FPS	Fast	Parties, Sunrises, Sunsets, Natural settings.

White Balance Mode

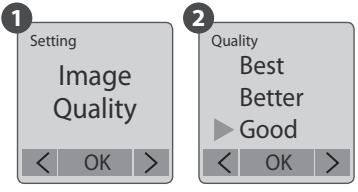


At the default setting of Auto (AWB), the camera automatically adjusts white balance so that a white subject will appear white regardless of the color of the light source. It may however be necessary to match white balance to the light source under mixed lighting or when photographing a subject that is a solid color.

Option		Description	Color Temperature
AWB	Auto	The camera adjust white balance automatically	Approx. 4000 to 7000K
☀	Day	Use when shooting in Daylight	Approx. 5000K
⌂	Shade	Use when shooting in the shade	Approx. 7000K
☁	Cloudy	Use when shooting on cloudy day	Approx. 6000K
FLC	Fluorescent Light-Cool	Use when shooting under fluorescent light Cool White	Approx. 4000K
FLW	Fluorescent Light-Warm	Use when shooting under fluorescent light Warm White	Approx. 3300K
💡	Tungsten Light	Use when shooting under Tungsten light	Approx. 2800K

Basic Setting

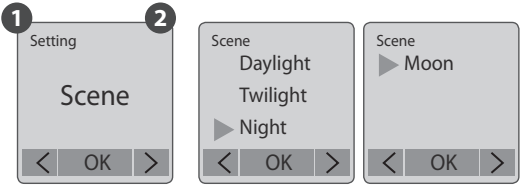
Image Quality



The Image Quality setting lets you choose a different image quality to fit your needs, and the image quality will determine the number of frames that can be stored on the SD Card:

Option	Single frame size	Description	4 GB SD card capability
Best	≒200~ 400 Kb	Low compression rate, big image size, for post-processing needs	≒ 14,000 photos
Better	≒150~ 300 Kb	General usage	≒ 20,000 photos
Good	≒ 70~ 150 Kb	High compression rate, small image size, for long term using.compression rate, small image size, for long term using.	≒ 30,000 photos

Scene

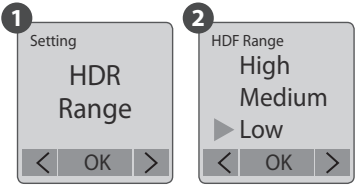


Select scene to fit your shooting needs.

Option		Description
SCN D	Daylight	For any shooting situation in Daytime .
SCN T	Twilight	Special setting for sunrise & sunset shooting. Shutter interval limited: 2 seconds and longer
SCN N	Night	Special setting for Nighttime shooting. Low ISO setting, long exposure time. Shutter interval limited: 5 seconds and longer
SCN M	Moon	Special setting for Moon photography. Low ISO setting, extra long exposure time up to 2 sec. Shutter interval limited: 7 seconds and longer

Basic Setting

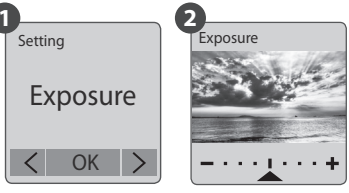
HDR Range



HDR (High Dynamic Range) setting let's you choose the requires HDR setting:

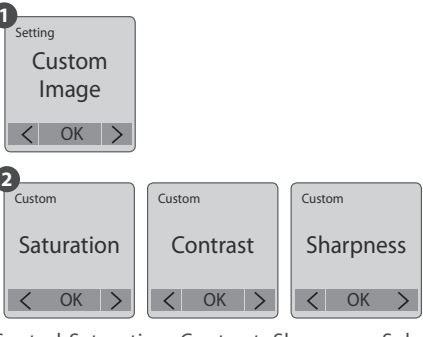
Option	Description (For example)
High	Suggested setting for sunrise or sunset.
Medium	For any standard shooting situation.
Low	For portraits.

Exposure



Into Exposure setting, press MENU (←) and TIME (→) to increase (+) or decrease (-) the exposure and press OK to exit.

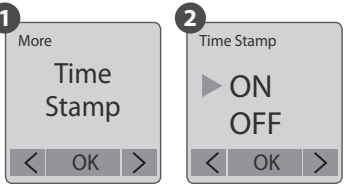
Custom Image



Control Saturation, Contrast, Sharpness. Select and enter each setting, using MENU (←) and TIME (→) to adjust the effect. Then press OK to exit.

More Setting

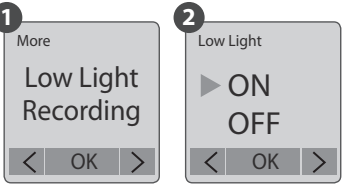
Time Stamp



You can choose if you want the time stamp to show at bottom of your video.

1. Select Time Stamp.
2. Select ON or OFF.

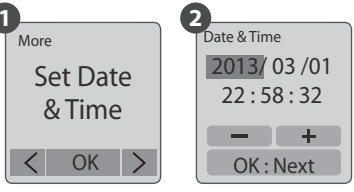
Low Light Recording



You can choose to set up your camera to record videos in a low light environment or not. (< 5 Lux).

1. Select Low Light Recording.
2. ON: Allows your camera to record video in a low light environment.
   OFF: Your camera will go to sleep in a low light environment.

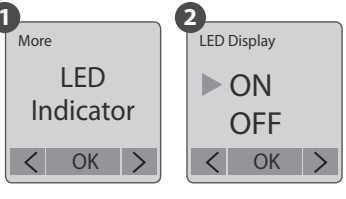
Set Date & Time



Set the correct date and time for your camera.

1. Select Set Date & Time.
2. In the highlight field, press MENU (-) to decrease the number, press TIME (+) to increase the number, press OK to confirm and go to the next field. When finished, press OK to exit set up.

LED Indicator

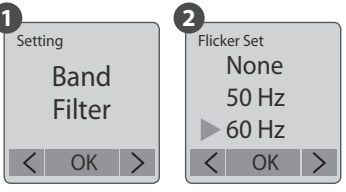


You can choose whether or not the LED indicator will flash while capturing each frame.

1. Select LED Indicator.
2. ON: When the camera is capturing a frame, the LED indicator will flash once.
   OFF: During capture period the LED indicator will not flash at all.

More Setting

Band Filter

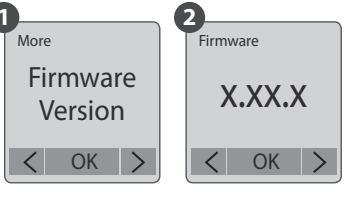


Select the correct fluorescent lighting frequency to match your indoor lighting frequency.

1. Select Band Filter.
2. None: For outdoor environment.
   50 Hz: USA
   60 Hz: Europe

⚠ Suggest use **None** when the scene is at outdoor.

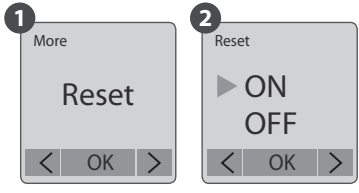
Firmware version



Displays the current version of firmware installed on the camera.

1. Select Firmware Version.
2. Displays the current version of firmware for 30 seconds. Press the OK button to exit firmware.

Reset



You can reset your camera back to the default setting.

1. Select Reset.
2. Select YES and press the OK button to reset your camera.

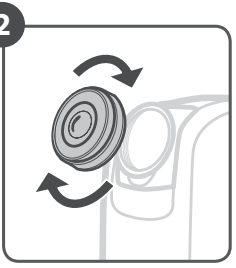
Function	Setting
Capture mode	Time Lapse
Time Interval	2 seconds
Time Lapse Frame Rate	10 FPS
Image Quality	Better
Scene	Daylight
HDR Range	Medium
Time Stamp	ON
Low Light Recording	ON
LED Indicator	ON
Band Filter	None

Reference

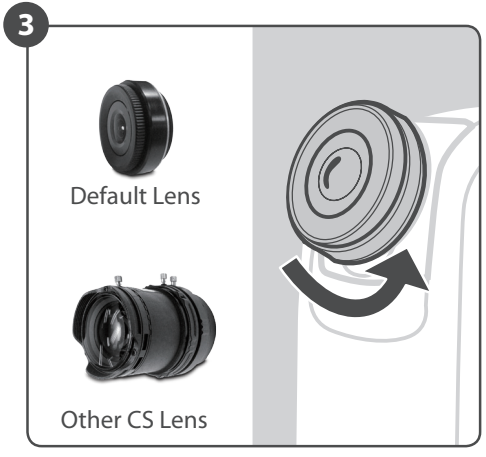
CS-mount lens

The TLC200 Pro comes with an interchangeable CS-Mount lens, so you can change the CS-Mount lens by yourself to fit your shooting needs.

Turn off Camera



Take off Lens



Replace other CS Lens

Extensional accessories

This extension connector is used for optional Brinno Time Lapse accessories:
Shutter Line (ATS110): For creating Stop Motion film and Face Time Lapse video
Motion Sensor (ATM110): For motion activated using, turn your time lapse camera into a motion activated camera!

Motion Sensor
(ATM110)

Shutter Line
(ATS110)

Reference

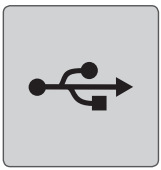
External Power

For long term use, you can attach an external power supply (DV 5V) through the Micro USB connector.

Micro USB connector

A. File transfer

You can connect the TLC200 Pro to your computer in order to transfer the time lapse video from the SD card to the computer.
OS requirement: Windows 98 and above.



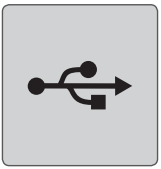
LCD Display

Reference

Micro USB connector

B. Webcam

With the TLC200 Pro connected to your computer you can install free webcam software. The TLC200 Pro can then be used as a webcam for your computer!
Suggested software: please check on Brinno.com
OS requirement: Windows 98 and above.



LCD Display

What Settings Should I Use

Subject	Description	Time Interval	Time Lapse Frame Rate
Daily Life	Recording kids, pets all parts of daily life	1~ 30 seconds	10~30
Party	Recording family parties, public events, and happy times all around	1~10 seconds	10~30
Traveling	Recording your trips, short and long	2 sec~ 1 min	10~30
Plant	Recording Flowers growing, or gardening over a period of time	1~30 min	15~30
Construction	Recording a building being built or any construction project	30 min~ 1 hr	15~30
Biking	Recording a bike ride or trip	1 sec	10~30
Face time lapse	You're the leading character in your time lapse videos	Shutter line	5

What Size SD Card Should I Use

SD card size	Stored photos
4 GB SD Card	30,000
8 GB SD Card	60,000
16 GB SD Card	120,000
32 GB SD Card	240,000

Scene: Day mode

Time interval	Captured frames to battery low	Days
ASAP	168,000	1
1 SEC	200,000	2.3
2 SEC	244,000	5.6
5 SEC	204,000	11.5
10 SEC	145,000	17.0
20 SEC	108,000	25.0
30 SEC	84,500	29.0
1 MIN	51,000	35.0
5 MIN	12,300	42.0
10 MIN	6,300	43.0
1 HR	1070	44.0
4 HR	269	44.5
24 HR	45	45.0

Battery Life

Scene: Twilight mode

Time interval	Captured frames to battery low	Days
2 SEC	67,400	1.6
5 SEC	55,500	3.2
10 SEC	51,300	5.9
20 SEC	51,000	11.5
30 SEC	45,000	15.0
1 MIN	33,700	23.0
5 MIN	10,900	38.0
10 MIN	5,900	41.0
1 HR	1,060	44.0
4 HR	269	44.5
24 HR	45	45.0

Scene: Night mode

Time interval	Captured frames to battery low	Days
5 SEC	39,000	2.3
10 SEC	30,000	3.5
20 SEC	28,100	6.5
30 SEC	26,200	9.0
1 MIN	21,800	15.0
5 MIN	9,300	32.0
10 MIN	5,400	37.0
1 HR	1,040	43.0
4 HR	268	44.0
24 HR	44	

Scene: Moon mode

Time interval	Captured frames to battery low	Days
7 SEC	18,300	1.5
10 SEC	18,800	2.2
20 SEC	16,000	3.5
30 SEC	15,500	5.0
1 MIN	13,800	9.0
5 MIN	7,400	25.0
10 MIN	4,700	32.0
1 HR	1000	42.0
4 HR	266	44.0
24 HR	44	

Specification

CAMERA	
Model	TLC200 Pro
LCD Screen	1.44" TFT LCD
Lens Rotating Angle	120°
Waterproof	Optional, (In use with TLC200Pro Weather Resistant Housing (ATH120))
CAPTURE MODE	
Time Lapse	Auto generated Time Lapse videos
Stop Motion	Optional, (In use with Shutter Line (ATS100))
Motion Activated	Optional, (In use with Motion Sensor (ATM110))
SENSOR	
Type	1/3" HDR sensor (115dB high dynamic range, The standard CMOS sensor only have 69dB)
Resolution	1.3 Mega pixel
Pixel size	4.2um
Sensitivity	3650mV/lux-sec (Ultra good low light quality)
OPTICS LENS	
Type	CS Mount
Aperture	F2.0
Field of View	D: 112°
Focal Length	14 mm (35mm equivalent)
Focus Distance	40 cm (Minimum)
RECORDING	
Time Lapse Video	Format: AVI Resolution: 1280x 720
Still Image	Format: JPEG (only for using Shutter Line)
	Resolution: 1280x 720
Memory Storage	SD Card (Supported up to 32 GB)
TIME INTERVAL	
Custom	From less than 1 second to 24 hours
POWER	
Power source	Battery: 4 AA Batteries
	DC IN: 5V (Micro USB connector)
DIMENSION	
Size (DxWxH)	64x 46x 106 mm
Weight	140 g (without batteries)
Color	Black

NOTE

NOTE

WARRANTY CARD

Model #: _____

Serial #: _____

Address: _____

Phone #: _____

Email: _____

Where did you buy our product?

_____

When did you buy our product?

_____

Contact us:
customerservice@brinno.com
More information:
www.brinno.com

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